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## PATENT ABSTRACTS OF JAPAN

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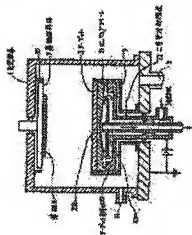
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## (54) SPUTTERING TREATMENT DEVICE



## (57)Abstract:

PURPOSE: To prevent the remaining of air bubbles on the rear side of a backing plate for supporting a water cooled lower electrode and to improve cooling efficiency by forming backing plate to such a thickness that the rear side thereof is thinner in the central part and thicker toward the circumference and draining water near the central part.

CONSTITUTION: A thin film is formed on a substrate 8 by regulating the reactive gas in a hermetic vessel 1, impressing a voltage to an upper electrode (substrate holding body) 7 and lower electrode (target) 3 and sputtering the target 3. A double pipe cooling structure 23 is internally provided between the backing plate 21 for holding the target 3 and a target support 22. The backing plate 21 is formed to the thickness of the

tapered shape on the rear side with which the plate is thinner in the central part and thicker toward the circumference. The cooling water is introduced from the circumference of the backing plate 21 into the double pipe cooling structure 23 with its outside pipe as an inflow port 23a and is discharged from the inside pipe near the central as a discharge port 23b. The air bubbles in the cooling water are thereby collected at the central part and are easily discharged. The target 3 is thus efficiently cooled.